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| Substitute for form 1449A/PTO   |   | <b>Complete if Known</b> |                   |                        |              |
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br><br>(use as many sheets as necessary) |   | Application Number       | 10/027115         |                        |              |
|   |   | Filing Date              | December 20, 2001 |                        |              |
|   |   | First Named Inventor     | Donald E. Ackley  |                        |              |
|   |   | Art Unit                 | 2828              |                        |              |
|   |   | Examiner Name            | Nguyen, Tuan N.   |                        |              |
| Sheet   | 1 | of                       | 1                 | Attorney Docket Number | BVTP-P01-029 |

| U.S. PATENT DOCUMENTS |                          |  |                                |  |  |
|-----------------------|--------------------------|--|--------------------------------|--|--|
| Examiner<br>Initials* | Cite<br>No. <sup>1</sup> | Document Number                          | Publication Date<br>MM-DD-YYYY | Name of Patentee or Applicant<br>of Cited Document | Pages, Columns, Lines,<br>Where Relevant<br>Passages or Relevant<br>Figures Appear |
|                       |                          | Number-Kind Code <sup>2</sup> (if known) |                                |  |  |
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| FOREIGN PATENT DOCUMENTS |                       |   |                  |   |   |                |
|--------------------------|-----------------------|---|------------------|---|---|----------------|
| Examiner Initials*       | Cite No. <sup>1</sup> | Foreign Patent Document   | Publication Date | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | T <sup>2</sup> |
|                          |                       | Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known) | MM-DD-YYYY       |   |   |                |
| TN                       | AA                    | DE 299 11 250 U1  | 11-25-1999       | Radchenko                                       |   |                |
| TN                       | AB                    | EP 0 560 627-A2   | 09-15-1993       | De Beers Industrial Diamond                     |   |                |
|                          |                       |   |                  |   |   |                |

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See attached Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the application number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

| OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS |                       |  |  |                |
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| Examiner Initials*                                | Cite No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published. |  | T <sup>2</sup> |
| TN  | CA                    | Duthie, P.J. et al. Passively aligned four-channel reflective InP MQW modulator transmitter. Electronics Letters 31(14), 1177-1179 (6 July 1995).  |  |                |
| TN  | CB                    | Wipiejewski, T. et al. Efficient Alignment Tolerant Coupling of Vertical-Cavity Lasers to Single-Mode Fibers. Proc. Euro. Conf. on Optical Comm. (ECOC), Zurich (12-16 Sept. 1993).  |  |                |
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| Examiner<br>Signature | <i>Tuan Nguyen</i> | Date<br>Considered | 5/28/04 |
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| Substitute Form PTO-1449<br>(Modified)   | U.S. Department of Commerce<br>Patent and Trademark Office | Attorney's Docket No.<br>11019-029001 | Application No.<br>10/027,115 |
| <b>Information Disclosure Statement<br/>by Applicant</b><br>(Use several sheets if necessary)<br>(37 CFR §1.98(b)) |  | Applicant<br>Donald E. Ackley         |                               |
|  |  | Filing Date<br>December 20, 2001      | Group Art Unit                |

| U.S. Patent Documents |           |               |            |                 |       |          |                            |
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| Examiner Initial      | Desig. ID | Patent Number | Issue Date | Patentee        | Class | Subclass | Filing Date If Appropriate |
| TN                    | AA        | 6,080,116     | 06/27/2000 | Erickson et al. | 600   | 573      |                            |
|                       | AB        | 6,050,988     | 04/18/2000 | Zuck            | 604   | 890.1    |                            |
|                       | AC        | 5,883,211     | 03/16/1999 | Sassi et al.    | 526   | 367.2    |                            |
|                       | AD        | 5,879,326     | 03/09/1999 | Godshall et al. | 60A   | 506      |                            |
|                       | AE        | 5,876,675     | 03/02/1999 | Kennedy         | 422   | 99       |                            |
|                       | AF        | 5,865,786     | 02/02/1999 | Sibalis et al.  | 604   | 20       |                            |
|                       | AG        | 5,858,188     | 01/12/1999 | Soane et al.    | 264   | 454      |                            |
|                       | AH        | 5,852,495     | 12/22/1998 | Parce           | 356   | 344      |                            |
|                       | AI        | 5,848,991     | 12/15/1998 | Gross et al.    | 604   | 140      |                            |
|                       | AJ        | 5,843,114     | 12/01/1998 | Jang            | 606   | 186      |                            |
|                       | AK        | 5,807,375     | 09/15/1998 | Gross et al.    | 60A   | 890.1    |                            |
|                       | AL        | 5,801,057     | 09/01/1998 | Smart et al.    | 436   | 68       |                            |
|                       | AM        | 5,697,901     | 12/16/1997 | Eriksson        | 664   | 46       |                            |
|                       | AN        | 5,658,515     | 08/19/1997 | Lee et al.      | 264   | 219      |                            |
|                       | AO        | 5,632,957     | 05/27/1997 | Heller et al.   | 422   | 68.1     |                            |
|                       | AP        | 5,618,295     | 04/08/1997 | Min             | 606   | 171      |                            |
|                       | AQ        | 5,611,942     | 03/18/1997 | Mitsui et al.   | 216   | 67       |                            |
|                       | AR        | 5,611,806     | 03/18/1997 | Jang            | 606   | 167      |                            |
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|                       | AU        | 5,582,184     | 12/10/1996 | Erickson et al. | 600   | 576      |                            |
|                       | AV        | 5,527,288     | 06/18/1996 | Gross et al.    | 604   | 140      |                            |
|                       | AW        | 5,457,041     | 10/10/1995 | Ginaven et al.  | 435   | 455      |                            |
|                       | AX        | 5,401,242     | 03/28/1995 | Yacowitz        | 604   | 48       |                            |
|                       | AY        | 5,383,512     | 01/24/1995 | Jarvis          | 164   | 46       |                            |
|                       | AZ        | 5,364,374     | 11/15/1994 | Morrison et al. | 604   | 272      |                            |
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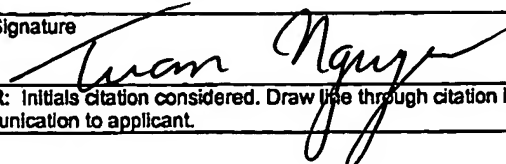
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|  |  | Filing Date<br>December 20, 2001      | Group Art Unit               |

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| Examiner Initial      | Desig. ID | Patent Number | Issue Date | Patentee         | Class | Subclass | Filing Date If Appropriate |
| TN                    | ACCC      | 3,086,530     | 04/23/1963 | Groom            | 606   | 186      |                            |
| I                     | ADDD      | 3,034,507     | 05/15/1962 | McConnell et al. | 604   | 46       |                            |
| I                     | AEEE      | 2,893,392     | 07/07/1959 | Wagner           | 604   | 47       |                            |

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| Examiner Initial  | Desig. ID | Document Number  | Publication Date | Country or Patent Office | Class | Subclass | Translation |    |
|   |           |                  |                  |                          |       |          | Yes         | No |
| TN  | AFFF      | 7-132119         | 05/23/1995       | JP                       |       |          | X           |    |
| I   | AGGG      | 7-196314         | 08/01/1995       | JP                       |       |          |             |    |
| I   | AHHH      | EP 0 652 600 B1  | 04/28/1999       | EP                       |       |          |             |    |
| I   | AIII      | WO 93/17754      | 09/16/1993       | WIPO                     |       |          |             |    |
| I   | AJJJ      | WO 96/37256      | 11/28/1996       | WIPO                     |       |          |             |    |
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| I   | ALLL      | WO 96/41236      | 12/19/1996       | WIPO                     |       |          |             |    |
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| I   | ANNN      | WO 98/00193      | 01/08/1998       | WIPO                     |       |          |             |    |
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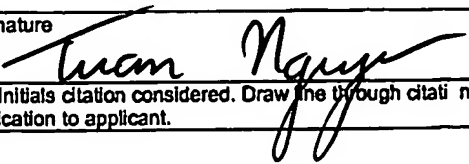
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|  | Applicant<br>Donald E. Ackley                              |                                       |                               |
|  | Filing Date<br>December 20, 2001                           | Group Art Unit                        |                               |

| U.S. Patent Documents |           |               |            |                    |       |          |                            |
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|                       | ACC       | 5,279,544     | 01/18/1994 | Gross et al.       | 604   | 20       |                            |
|                       | ADD       | 5,250,023     | 10/05/1993 | Lee et al.         | 604   | 20       |                            |
|                       | AEE       | 5,138,220     | 08/11/1992 | Kirkpatrick        | 313   | 309      |                            |
|                       | AFF       | 5,054,339     | 10/08/1991 | Yacowitz           | 81    | 9.22     |                            |
|                       | AGG       | 5,035,711     | 07/30/1991 | Aoki et al.        | 424   | 422      |                            |
|                       | AHH       | 4,969,468     | 11/13/1990 | Byers et al.       | 600   | 373      |                            |
|                       | AII       | 4,921,475     | 05/01/1990 | Sibalis            | 604   | 20       |                            |
|                       | AJJ       | 4,798,582     | 01/17/1989 | Sarath et al.      | 604   | 47       |                            |
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|                       | ALL       | 4,703,761     | 11/03/1987 | Rathbone et al.    | 600   | 576      |                            |
|                       | AMM       | 4,671,288     | 06/09/1987 | Gough              | 600   | 347      |                            |
|                       | ANN       | 4,664,651     | 05/12/1987 | Weinshenker et al. | 604   | 115      |                            |
|                       | AOO       | 4,320,758     | 03/23/1982 | Eckenhoff et al.   | 604   | 802.1    |                            |
|                       | APP       | 4,222,392     | 09/16/1980 | Brennan            | 600   | 556      |                            |
|                       | AQQ       | 4,156,659     | 05/29/1979 | Barnhart           | 376   | 323      |                            |
|                       | ARR       | 4,109,655     | 08/29/1978 | Chacornac          | 604   | 47       |                            |
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|                       | AUU       | 3,675,766     | 07/11/1972 | Rosenthal          | 206   | 367      |                            |
|                       | AVV       | 3,596,660     | 08/03/1971 | Melone             | 604   | 47       |                            |
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|                       | ABBB      | 3,123,212     | 03/03/1964 | Taylor et al.      | 206   | 367      |                            |

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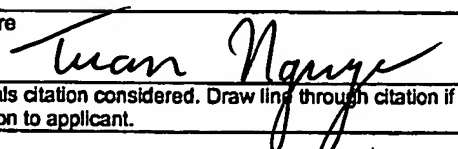
| Other Documents (include Author, Title, Date, and Place of Publication) |           |  |
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| Examiner Initial  | Desig. ID | Document   |
| TN  | AXXX      | Amsden et al., "Transdermal Delivery of Peptide and Protein Drugs: an Overview," <i>ALChE Journal</i> 41(8):1972-1997 (1995).  |
| /   | AYYY      | Bronaugh et al, <i>Percutaneous Absorption: Mechanisms, Methodology, Drug Delivery</i> , (1985)  |
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| /   | ADDDD     | Frazier et al., "Two Dimensional Metallic Microelectrode Arrays for Extracellular Stimulation and Recording of Neurons", <i>IEEE Proceedings of the Micro Electro Mechanical Systems Conference</i> , pp. 195-200 (1993).  |
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| /   | AFFFF     | Haga et al., "Transdermal iontophoretic delivery of insulin using a photoetched microdevice," <i>Journal of Controlled Release</i> 43 (1997) 139-149   |
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| /   | AHHHH     | Henry et al., "Microfabricated Microneedles: A Novel Approach to Transdermal Drug Delivery" <i>Journal of Pharmaceutical Sciences</i> Vol. 87, No. 8 (1998)  |
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| /   | APPPP     | Lin, et al. "Silicon Processed Microneedles" <i>The 7<sup>th</sup> International Conference on Solid-State Sensors and Actuators</i> , 1993  |
| /   | AQQQQ     | Martin et al., "Template Synthesis of Organic Microtubules," <i>J. Am. Chem. Soc.</i> 1990, 112, 8976-8977   |

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| Examiner Initial  | Design ID | Document  |
| TN  | ARRRR     | Najafi et al. "Strength Characterization of Silicon Microprobes in Neurophysiological Tissues," <i>IEEE Transactions on Biomedical Engineering</i> Vol. 37, No. 5 May 1990  |
|   | ASSSS     | Prausnitz, Mark R. "Reversible Skin Permeabilization for Transdermal Delivery of Macromolecules" <i>Critical Reviews in Therapeutic Drug Carrier Systems</i> , 14(4):455-483 (1997)   |
|   | ATTTT     | Quan, "Researchers envision pain-free drug delivery: Plasma etch yields microneedle arrays" <i>Electronic Engineering Times</i> 63:63-64 (1998)   |
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|   | AVVVV     | Reiss "Glucose-and Blood Monitoring Systems Vie for Top Spot" <i>Biophotonics Int'l</i> , pp.43-45 (May/June 1997)  |
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|   | AAAAAA    | Weber et al., "Micromolding - a powerful tool for the large scale production of precise microstructure," <i>Proc. SPIE - International Soc. Optical Engineer</i> 2879:156-167 (1996).   |
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